

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (currently amended) A voice and data communication system comprising a customer premises equipment (CPE) element and a line card for transferring communication signals between a subscriber and a network, said line card comprising:

~~an a broadband analog front end for coupling said line card to said CPE through a transmission medium;~~

~~a digitizer for digitizing received voice signals;~~

~~a packetizer for packetizing said digitized voice signals; signals, wherein said packetizer performs at least one of voice over internet protocol (VoIP) and voice over asynchronous transfer mode (VoATM) packetization;~~

~~a modem for transmitting voice and data packets to said CPE; and~~

~~a system interface for coupling said line card to at least one network;~~

~~wherein said line card digitizes and packetizes said voice signals upon failure of said CPE.~~

2. (currently amended) A system as defined in claim 1, wherein said CPE comprises:

~~a digitizer for digitizing received voice signals;~~

~~a packetizer for packetizing said digitized voice signals; signals, wherein said packetizer performs at least one of voice over internet protocol (VoIP) and voice over asynchronous transfer mode (VoATM) packetization;~~

~~a modem for transmitting voice packets; and~~

~~a switch for bypassing said packetizing system to a Plain Old Telephone System (POTS) terminal.~~]

3. (original) A system as defined in claim 2, wherein said switch is a relay for switching between said packetizer and said POTS system.

4. (original) A system as defined in claim 3, wherein the position of said switch is determined by a signal, said signal indicating the status of the connection between said CPE and said line card.

5. (original) A system as defined in claim 1, wherein said modem is a Digital Subscriber Line (DSL) modem.

6. (original) A system as defined in claim 2, wherein said line card packetizes said voice signals upon failure of said CPE to do so, and wherein digitizing and packetizing equipment of said CPE is bypassed.

7. (original) A system as defined in claim 2, wherein said failure is a power failure at said subscriber's location.

8. (original) A system as defined in claim 2, wherein said failure is inability to synchronize a DSL modem on said CPE with a DSL modem on said line card.

9. (currently amended) A system as defined in claim 2, wherein said digitizers provide high quality enhanced packet voice audio encoding.

10. (currently amended) A system as defined in claim 2, wherein said packetizers provide high quality enhanced packet voice audio encoding.

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11. (currently amended) A system for providing a voice signal for transmission comprising a line card for receiving said voice signal from a telephone via a subscriber line, said line card including:

~~an analog a front end for coupling said line card to said telephone;~~

~~a digitizer for digitizing received voice signals;~~

~~a packetizer for packetizing said digitized voice signals; signals, wherein said packetizer performs at least one of voice over internet protocol (VoIP) and voice over asynchronous transfer mode (VoATM) packetization; and~~

~~a modem for receiving voice packets from a CPE and transmitting said voice packets to a data network;~~

~~a system interface for coupling said line card to a voice network and said data network; and network.~~

~~a controller for controlling the destination of said voice signal;~~

~~wherein said system can provide said voice signals to said voice network and said data network.~~

12. (currently amended) A system as defined in claim 11, wherein said front end corresponds to a broadband analog front end, wherein said network corresponds to a voice network, wherein said system interface further couples said line card to a data network, and wherein said line card further comprises:

a modem for receiving voice packets from said CPE and transmitting a data signal to said data network,

wherein said line card is operative to receive a said data signal on the same loop as said voice signal, and wherein said broadband analog front end separates said data signal from said voice signal, and said modem transmits said data signal to said data network. signal.

13. (currently amended) A system as defined in claim 11 or 12, wherein said modem is a DSL modem.

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14. (new) The system of claim 11, wherein said line card further includes:
a merge controller circuit that controls said digitizer and said packetizer to digitize
and packetize said voice signals upon failure of said telephone.
15. (new) The system of claim 11, wherein said front end corresponds to a
broadband analog front end, and wherein said line card further includes:
a modem that transmits said packetized voice signals to said telephone via said
broadband analog front end circuit.
16. (new) The system of claim 15, wherein said modem is a digital subscriber
line (DSL) modem.
17. (new) The system of claim 15, wherein said line card is operative to
receive a data signal on said subscriber line with said voice signal, wherein said broadband
analog front end further separates said data signal from said voice signal, and wherein said
modem transmits said data signal to said network.
18. (new) The system of claim 15, wherein said telephone comprises:
a second digitizer that digitizes second received voice signals;
a second packetizer that packetizes said second digitized voice signals, wherein
said second packetizer performs at least one of said VoIP packetization and said VoATM
packetization;
a second modem that transmits said second packetized voice signals to said line
card via said subscriber line; and
a switch that selectively bypasses said second digitizer, said second packetizer,
and said second modem to a plain old telephone system (POTS) terminal.

19. (new) The system of claim 18, wherein a position of said switch is determined by a signal, and wherein said signal indicates a status of a connection between said telephone and said line card.

20. (new) The system of claim 18, wherein failure of said telephone to packetize said second voice signals results in said line card packetizing said digitized voice signals and said switch bypassing said second packetizer.

21. (new) The system of claim 20, wherein said failure is a power failure at a subscriber location.

22. (new) The system of claim 20, wherein said failure is an inability to synchronize said modem and said second modem.

23. (new) The system of claim 11, wherein said packetizer circuit performs enhanced packet voice packetizing.

24. (new) The system of claim 11, wherein said digitizer circuit performs enhanced packet voice digitization.

25. (new) The system of claim 11, wherein said system interface circuit further selectively couples said line card to one of said network and a second network, wherein said line card further comprises:

a merge controller that selectively controls said digitizer, said packetizer and said system interface with a control signal,

wherein a first aspect of said control signal corresponds to said packetized voice signals being sent to said network, and

wherein a second aspect of said control signal corresponds to unpacketized voice signals being sent to said second network, wherein said digitizer and said packetizer are bypassed.

26. (new) The system of claim 25, wherein said network comprises a multi service data network (MSDN), and wherein said first aspect of said control signal corresponds to a packetizing voice mode.

27. (new) The system of claim 25, wherein said second network comprises a public switched telephone network (PSTN), and wherein said second aspect of said control signal corresponds to a plain old telephone system (POTS) mode.

28. (new) The system of claim 11, wherein said digitizer circuit implements one of a μ -law code and an A-law code.

29. (new) The system of claim 11, wherein said telephone comprises a conventional telephone terminal.

30. (new) The system of claim 11, wherein said telephone comprises a packetizing telephone.

31. (new) An apparatus including an enhanced line card in a telecommunications system, said enhanced line card being a component of a telecommunications access equipment coupling at least one subscriber line to at least one telecommunications network, said enhanced line card comprising:

a system interface that interfaces said enhanced line card to a first type of telecommunications network and a second type of telecommunications network;

a packetizer, coupled to said system interface, that converts between packetized and non-packetized communication signals, wherein said packetizer performs at least

one of voice over internet protocol (VoIP) and voice over asynchronous transfer mode (VoATM) packetization;

a digitizer, coupled to said packetizer and said system interface, that converts between digital and analog communication signals;

a modem, coupled to said system interface, that communicates digital subscriber line (DSL) signals;

a broadband front end, coupled to said digitizer and said modem, that selectively communicates first communication signals between said digitizer and said at least one subscriber line and second communication signals between said modem and said at least one subscriber line; and

a merge controller that controls said system interface, said packetizer, said digitizer, and said modem, wherein said merge controller selectively sends a first control signal, a second control signal, and a third control signal,

wherein said first control signal controls said system interface, said packetizer and said digitizer to process third communication signals between said second type of telecommunications network and a first type of customer premises equipment (CPE),

wherein said second control signal controls said system interface and said digitizer to process fourth communication signals between said first type of telecommunications network and said first type of CPE, and

wherein said third control signal controls said system interface and said modem to process fifth communication signals between said second type of telecommunications network and a second type of CPE.

32. (new) The apparatus of claim 31, wherein said first type of telecommunications network comprises a public switched telephone network (PSTN).

33. (new) The apparatus of claim 31, wherein said second type of telecommunications network comprises a multi service data network (MSDN).

34. (new) The apparatus of claim 31, wherein said first control signal corresponds to a packetizing voice mode.
35. (new) The apparatus of claim 31, wherein said second control signal corresponds to a plain old telephone system (POTS) mode.
36. (new) The apparatus of claim 35, wherein said second control signal and said third control signal correspond to a simultaneous DSL/POTS mode.
37. (new) The apparatus of claim 31, wherein said third control signal corresponds to a DSL mode.
38. (new) The apparatus of claim 31, wherein said at least one subscriber line includes at least one analog subscriber line.
39. (new) The apparatus of claim 31, wherein said at least one subscriber line includes at least one digital subscriber line.
40. (new) The apparatus of claim 31, wherein said system interface interfaces said enhanced line card to a public switched telephone network (PSTN) and a multi service data network (MSDN).
41. (new) The apparatus of claim 31, wherein said packetizer comprises one of a voice over internet protocol (VoIP) engine and a voice over asynchronous transfer mode (VoATM) engine.
42. (new) The apparatus of claim 31, wherein said broadband front end communicates plain old telephone system (POTS) signals.

43. (new) The apparatus of claim 31, wherein said broadband front end communicates said DSL signals.

44. (new) The apparatus of claim 31, wherein said broadband front end communicates plain old telephone system (POTS) signals and said DSL signals.

45. (new) The apparatus of claim 31, wherein said digitizer implements one of a μ -law code and an A-law code.

46. (new) The apparatus of claim 31, wherein said digitizer and said packetizer implement enhanced packet voice communication.

47. (new) The apparatus of claim 31, wherein said modem comprises a DSL modem.

48. (new) The apparatus of claim 31, wherein said merge controller controls said enhanced line card to selectively communicate plain old telephone system (POTS) signals with a POTS subscriber, said DSL signals with a DSL subscriber, packetized voice signals with a packetized voice subscriber, and combined POTS/DSL signals with a combined POTS/DSL subscriber.

49. (new) The apparatus of claim 31, wherein said first type of CPE comprises a conventional telephone terminal.

50. (new) The apparatus of claim 31, wherein said second type of CPE comprises a packetizing CPE.

51. (new) An apparatus including an enhanced line card in a telecommunications system, said enhanced line card being a component of a telecommunications

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access equipment coupling at least one subscriber line to at least one telecommunications network, said enhanced line card comprising:

a system interface that interfaces said enhanced line card to a first type of telecommunications network and a second type of telecommunications network;

a packetizer, coupled to said system interface, that converts between packetized and non-packetized communication signals, wherein said packetizer performs at least one of voice over internet protocol (VoIP) or voice over asynchronous transfer mode (VoATM) packetization;

a digitizer, coupled to said packetizer and said system interface, that converts between digital and analog communication signals;

a front end, coupled to said digitizer, that communicates first communication signals between said digitizer and said at least one subscriber line; and

a merge controller that controls said system interface, said packetizer, and said digitizer, wherein said merge controller selectively sends a first control signal and a second control signal,

wherein said first control signal controls said system interface, said packetizer and said digitizer to process second communication signals between said second type of telecommunications network and a conventional telephone terminal, and

wherein said second control signal controls said system interface and said digitizer to process third communication signals between said first type of telecommunications network and said conventional telephone terminal.

52. (new) The apparatus of claim 51, wherein said front end comprises a broadband front end, and wherein said enhanced line card further comprises:

a modem, coupled between said system interface and said broadband front end, that communicates digital subscriber line (DSL) signals,

wherein said broadband front end further selectively communicates fourth communication signals between said modem and said at least one subscriber line,

wherein said merge controller further controls said modem and further selectively sends a third control signal, and

wherein said third control signal controls said system interface and said modem to process fifth communication signals between said second type of telecommunications network and a packetizing customer premises equipment.

53. (new) The apparatus of claim 51, wherein said first type of telecommunications network comprises a public switched telephone network (PSTN).

54. (new) The apparatus of claim 51, wherein said second type of telecommunications network comprises a multi service data network (MSDN).

55. (new) The apparatus of claim 51, wherein said first control signal corresponds to a packetizing voice mode.

56. (new) The apparatus of claim 51, wherein said second control signal corresponds to a plain old telephone system (POTS) mode.

57. (new) The apparatus of claim 51, wherein said at least one subscriber line includes at least one analog subscriber line.

58. (new) The apparatus of claim 51, wherein said system interface interfaces said enhanced line card to a public switched telephone network (PSTN) and a multi service data network (MSDN).

59. (new) The apparatus of claim 51, wherein said packetizer comprises one of a voice over internet protocol (VoIP) engine and a voice over asynchronous transfer mode (VoATM) engine.

60. (new) The apparatus of claim 51, wherein said front end communicates plain old telephone system (POTS) signals.

61. (new) The apparatus of claim 51, wherein said digitizer implements one of a μ -law code and an A-law code.

62. (new) The apparatus of claim 51, wherein said digitizer and said packetizer implement enhanced packet voice communication.